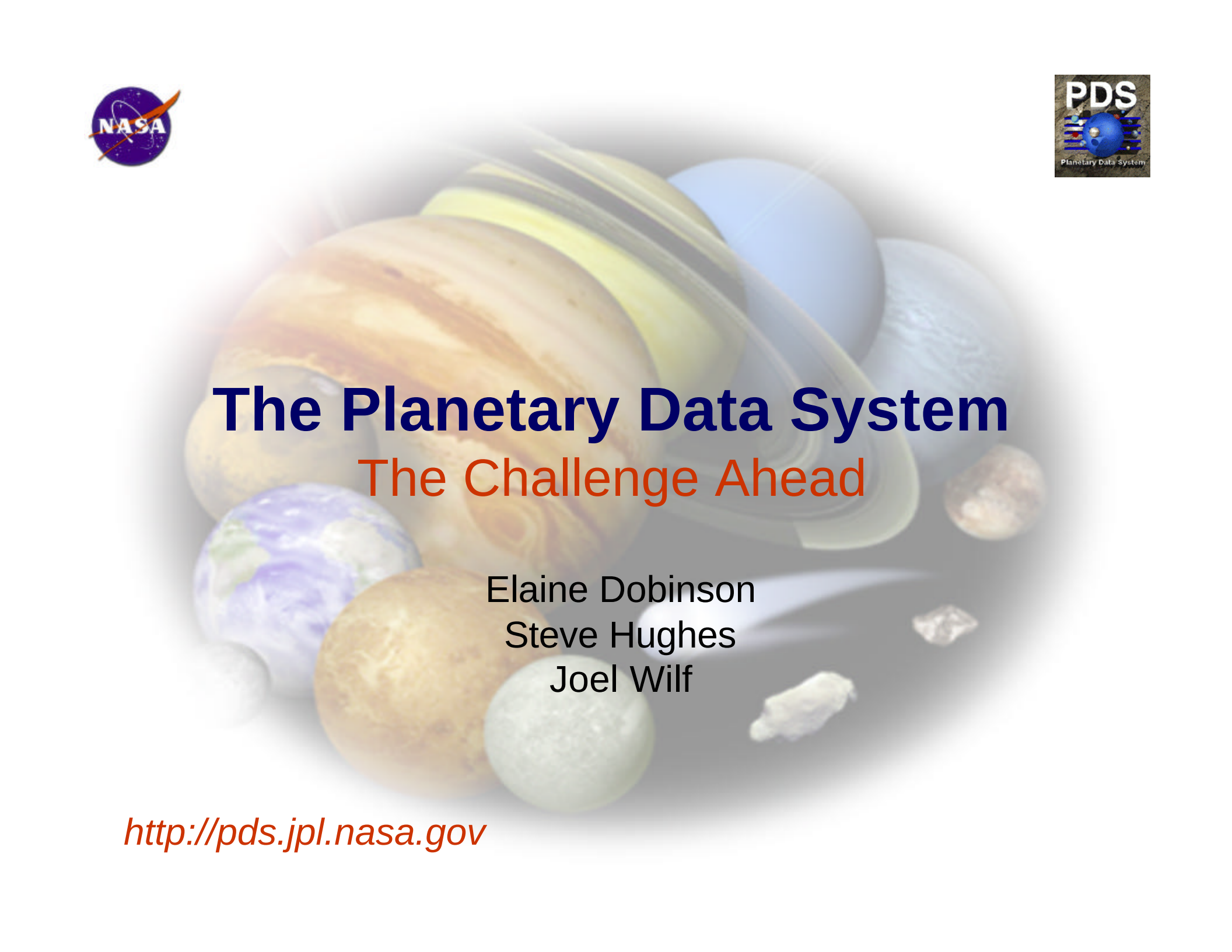


The Planetary Data System

The Challenge Ahead

Elaine Dobinson
Steve Hughes
Joel Wilf

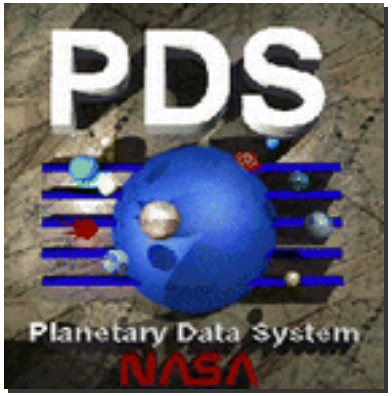
http://pds.jpl.nasa.gov

The Planetary Data System

The PDS manages, preserves, and disseminates the large volume of unique and valuable data returned by Solar System Exploration missions

Key PDS Products:

- High quality, peer-reviewed data archives
- Value-added data products
- Educational data products
- Science expertise for researchers
- Data distribution to planetary scientists
- Interface to active missions and mission planning

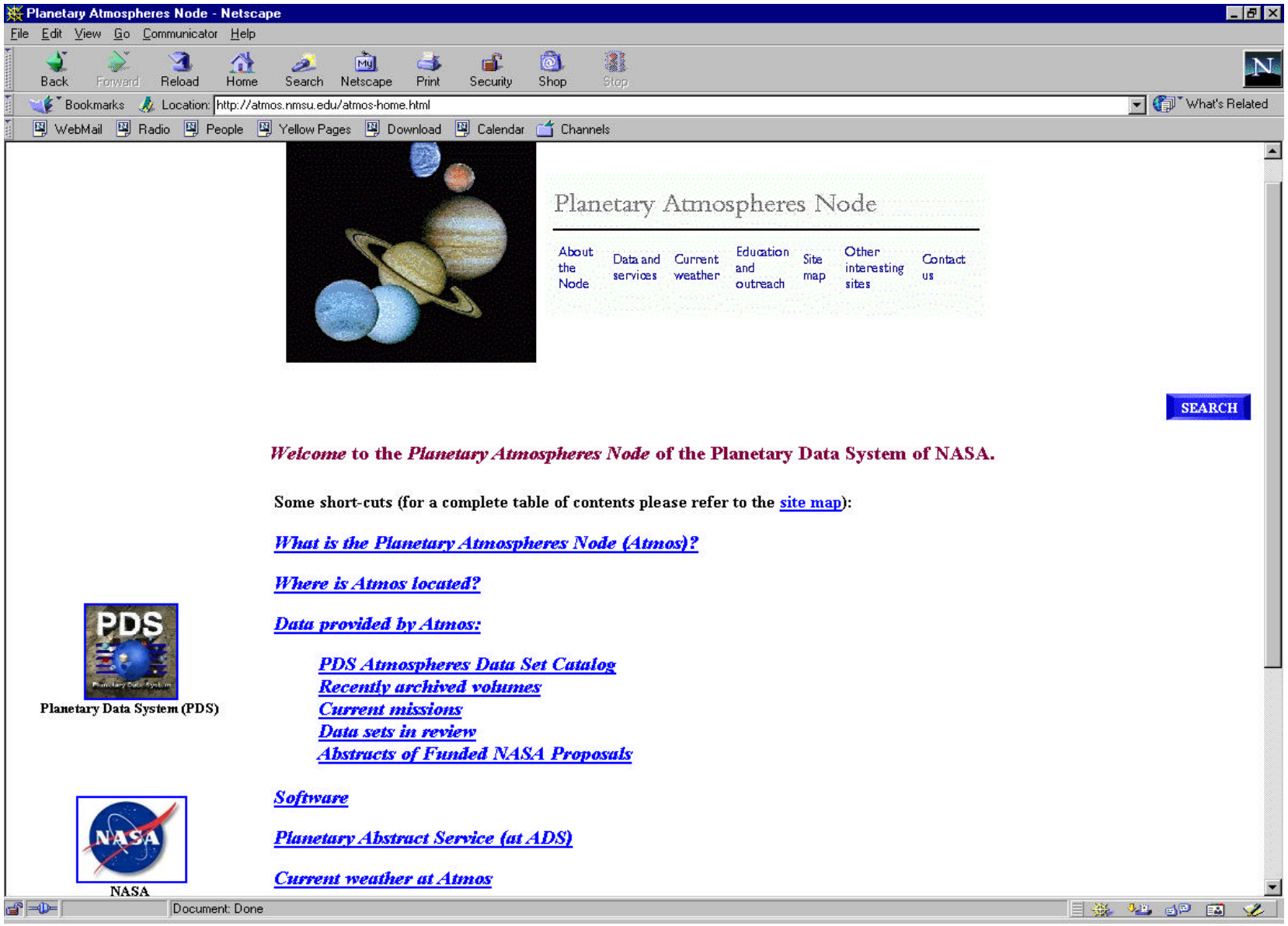


http://pds.jpl.nasa.gov

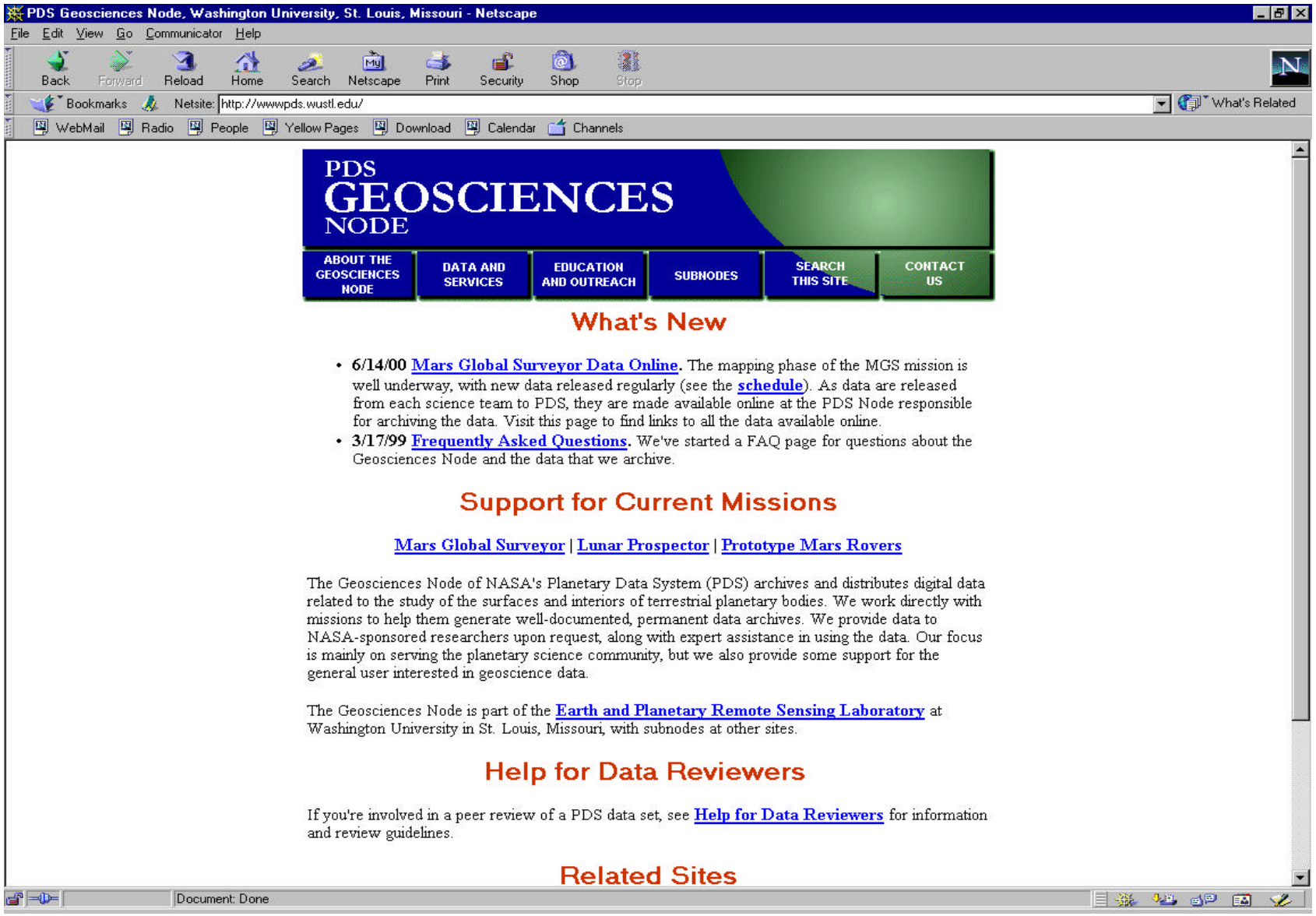
PDS Nodes	Atmospheres	Geosciences	Imaging	NAIF	PPI	Rings	Small Bodies Node
	New Mexico State Univ.	Wash Univ. St. Louis	JPL/USGS Flagstaff	JPL	UCLA	NASA Ames	U. Maryland

Node structure provides focus on key disciplines

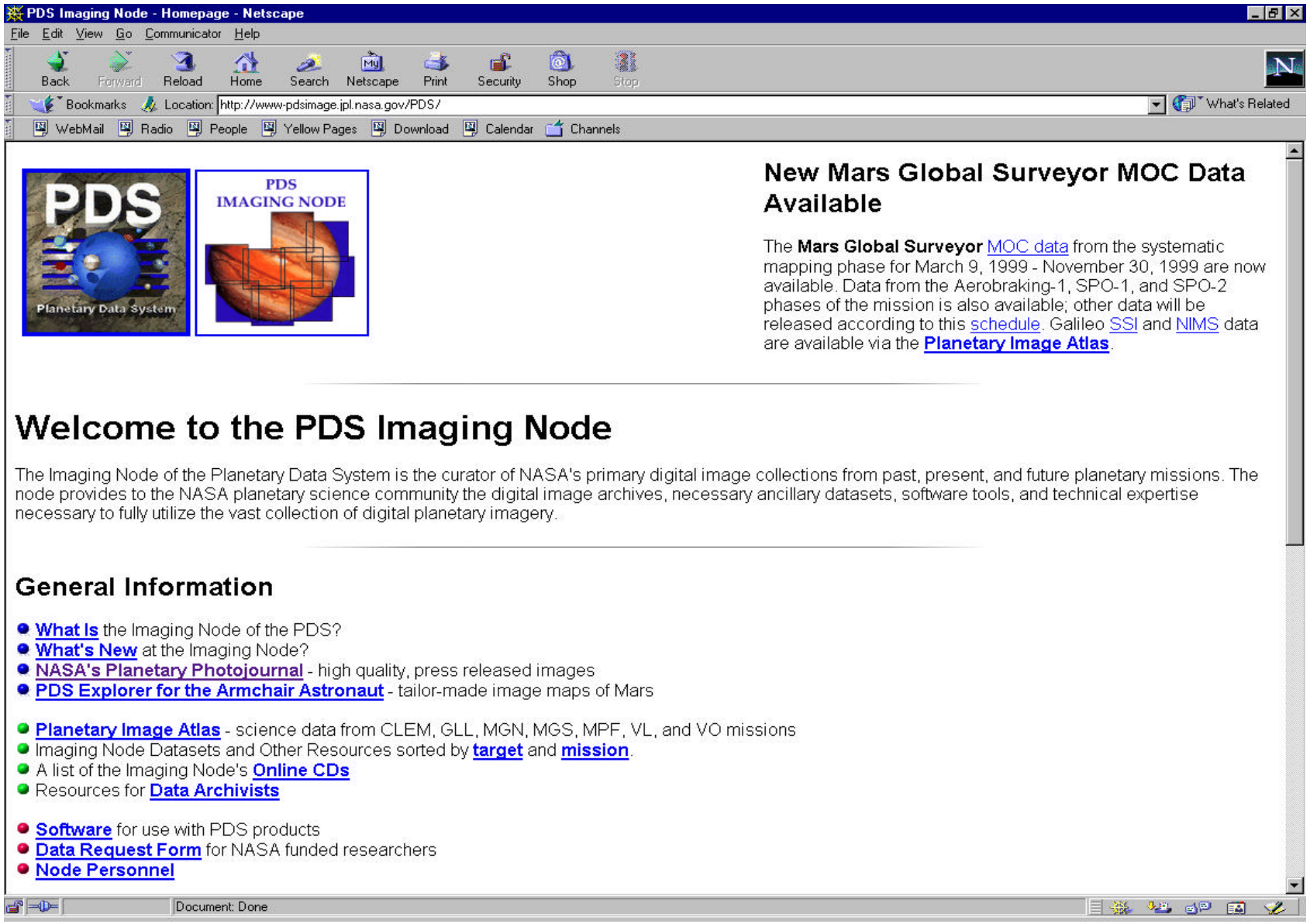
PDS Atmospheres Node



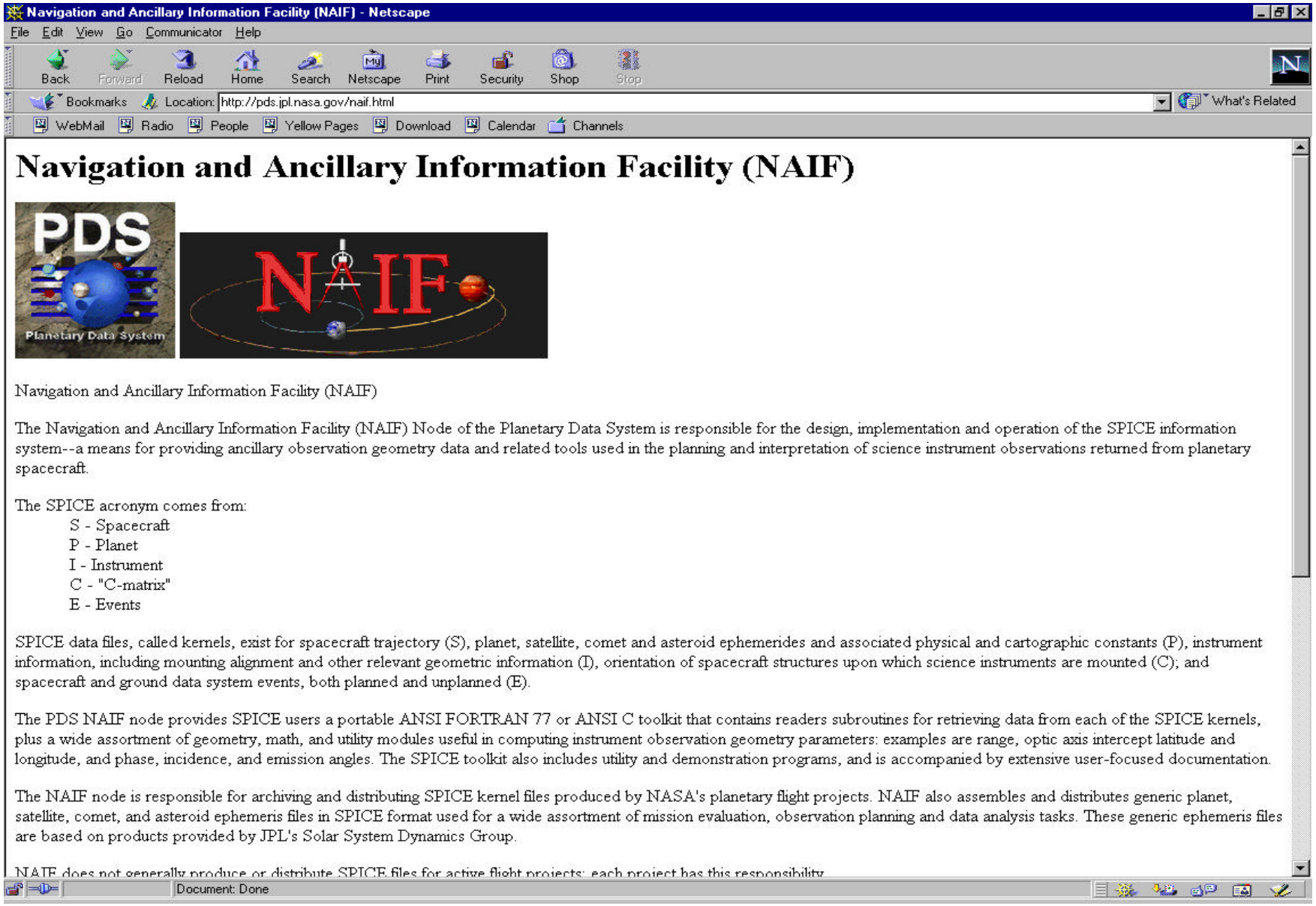
PDS Geosciences Node



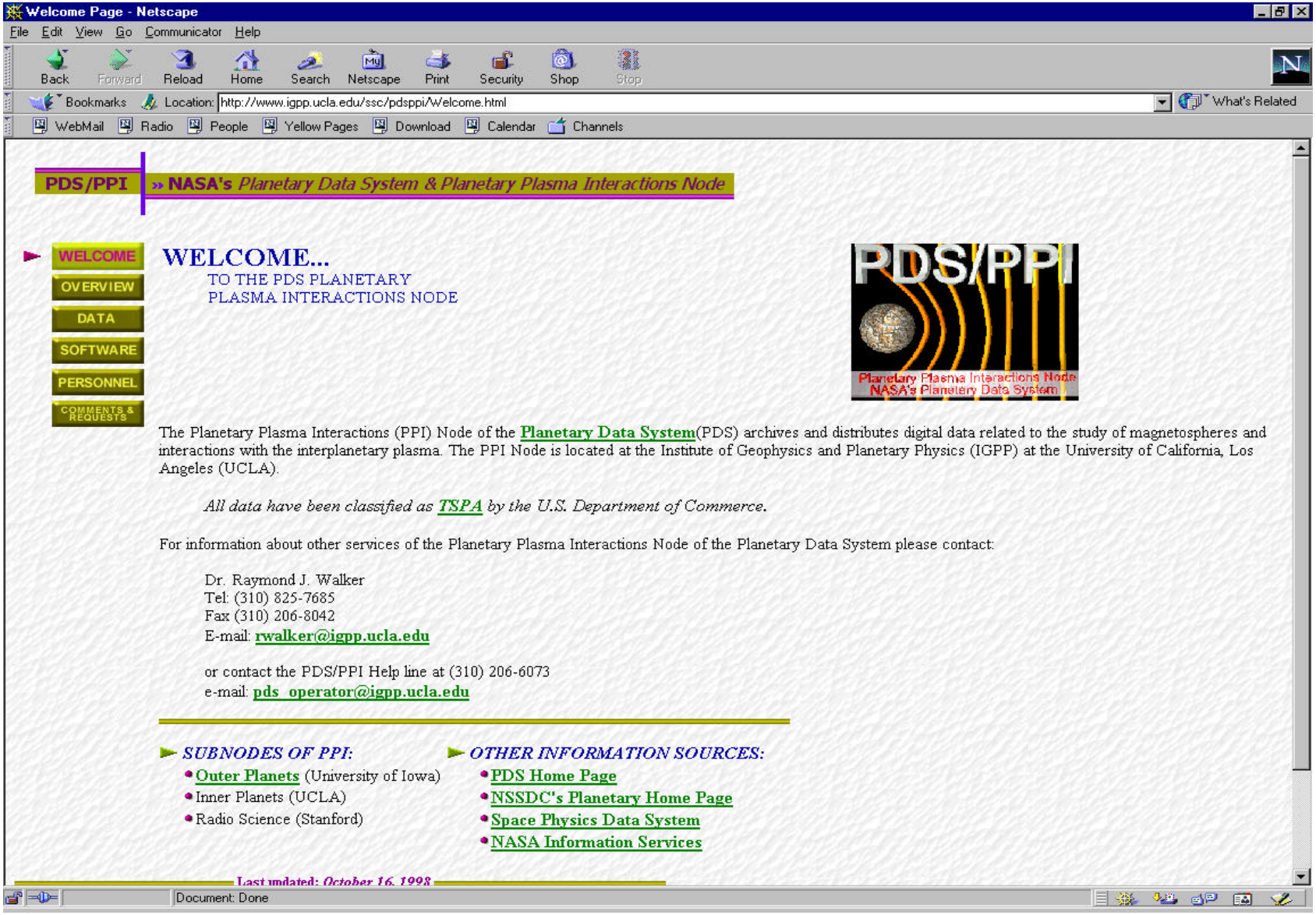
PDS Imaging Node



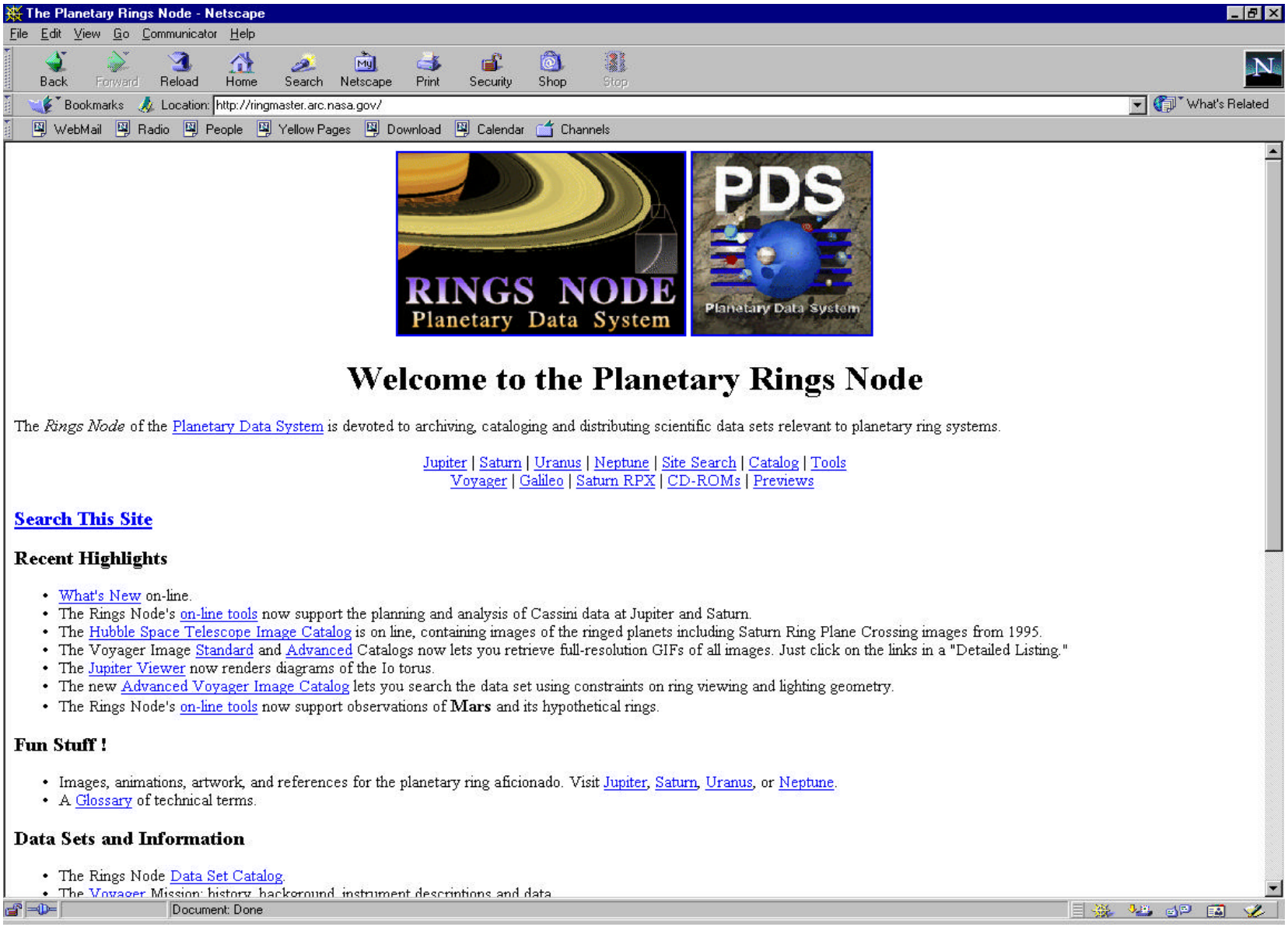
PDS NAIF Node



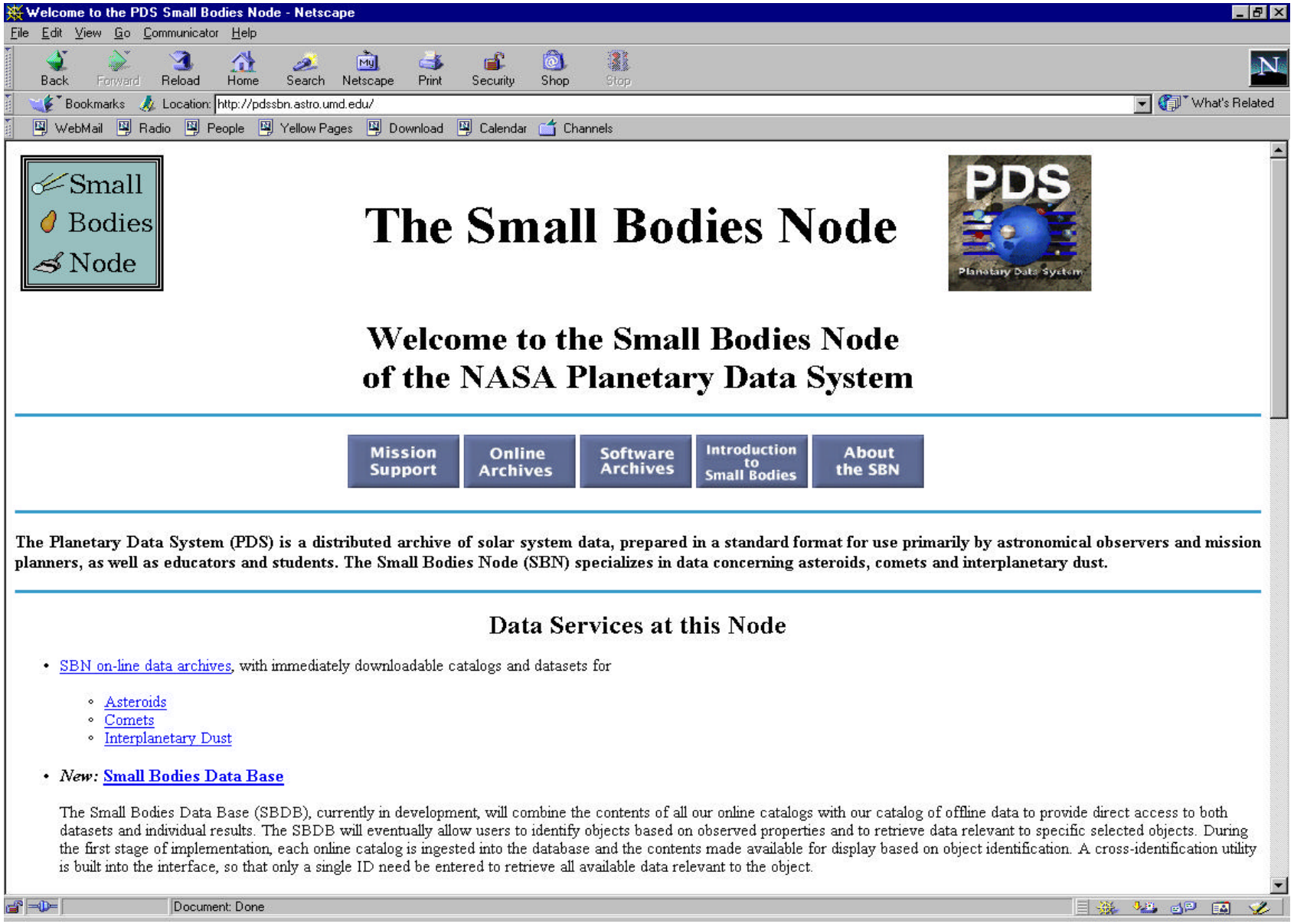
PDS PPI Node


Welcome Page - Netscape
File Edit View Go Communicator Help
Back Forward Reload Home Search Netscape Print Security Shop Stop
Bookmarks Location: http://www.igpp.ucla.edu/ssc/pdsppi/Welcome.html What's Related
WebMail Radio People Yellow Pages Download Calendar Channels
PDS/PPI » NASA's Planetary Data System & Planetary Plasma Interactions Node
WELCOME
OVERVIEW
DATA
SOFTWARE
PERSONNEL
COMMENTS & REQUESTS
WELCOME...
TO THE PDS PLANETARY
PLASMA INTERACTIONS NODE
PDS/PPI
Planetary Plasma Interactions Node
NASA's Planetary Data System
The Planetary Plasma Interactions (PPI) Node of the Planetary Data System(PDS) archives and distributes digital data related to the study of magnetospheres and interactions with the interplanetary plasma. The PPI Node is located at the Institute of Geophysics and Planetary Physics (IGPP) at the University of California, Los Angeles (UCLA).
All data have been classified as TSPA by the U.S. Department of Commerce.
For information about other services of the Planetary Plasma Interactions Node of the Planetary Data System please contact:
Dr. Raymond J. Walker
Tel: (310) 825-7685
Fax (310) 206-8042
E-mail: rwalker@igpp.ucla.edu
or contact the PDS/PPI Help line at (310) 206-6073
e-mail: pds_operator@igpp.ucla.edu
SUBNODES OF PPI:
Outer Planets (University of Iowa)
Inner Planets (UCLA)
Radio Science (Stanford)
OTHER INFORMATION SOURCES:
PDS Home Page
NSSDC's Planetary Home Page
Space Physics Data System
NASA Information Services
Last updated: October 16, 1998
Document: Done

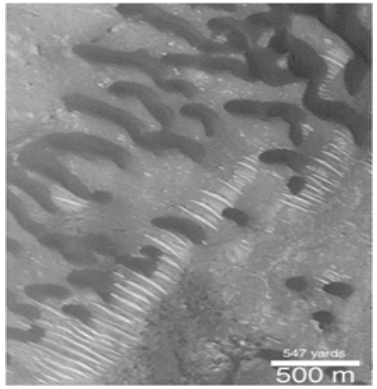
PDS Rings Node



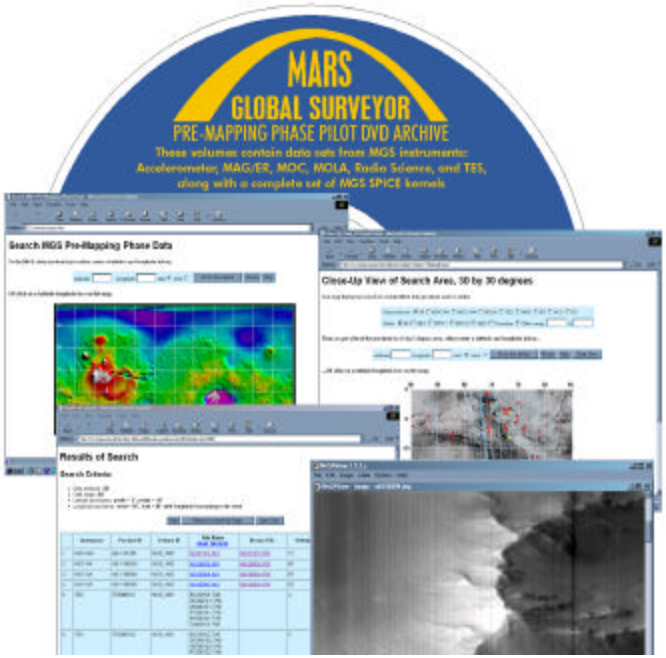
PDS Small Bodies Node

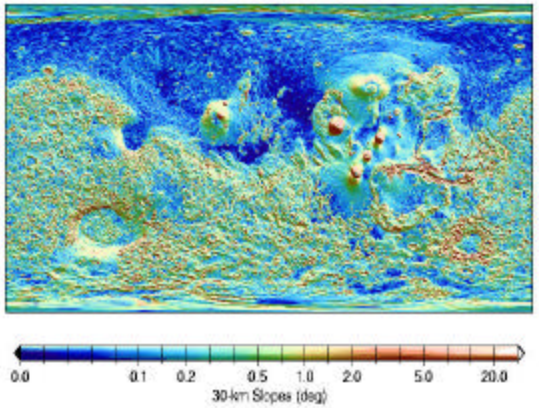


PDS Mars Global Surveyor Products

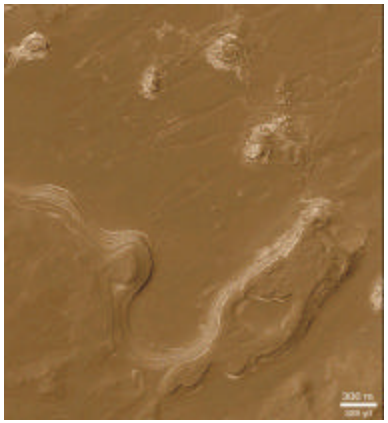


Dark Dunes Over-riding Bright Dunes
MGS MOC Release No. MOC2-201,
1/31/2000

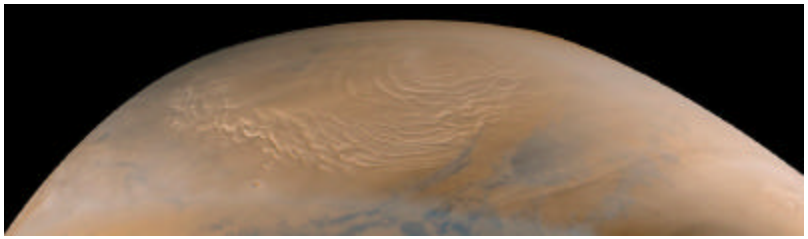




MGS MOLA Global map of surface gradients on Mars
Catalog #: PIA02809 10-06-2000

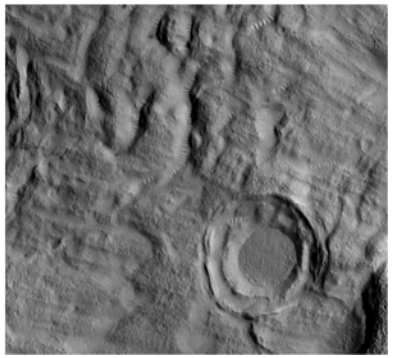


Sediment History Preserved in
Gale Crater Central Mound
Catalog #: PIA02846 12-04-2000



Martian North Polar Cap on September 12, 1998
Catalog #: PIA01471

http://photojournal.jpl.nasa.gov/
http://www-pdsimage.jpl.nasa.gov/PDS/
http://wwwpds.wustl.edu/
http://ida.wr.usgs.gov/



MOC Narrow angle image M0202861 of
Neith Regio centered at latitude 37.25,
longitude 268.24..

Key PDS Design Features - 1

- **Geographically distributed data archives**
  - Based on CODMAC recommendation for discipline data systems
  - Keeps data in the hands of the scientific experts
  - Promotes closer ties with mission instrument teams and science community

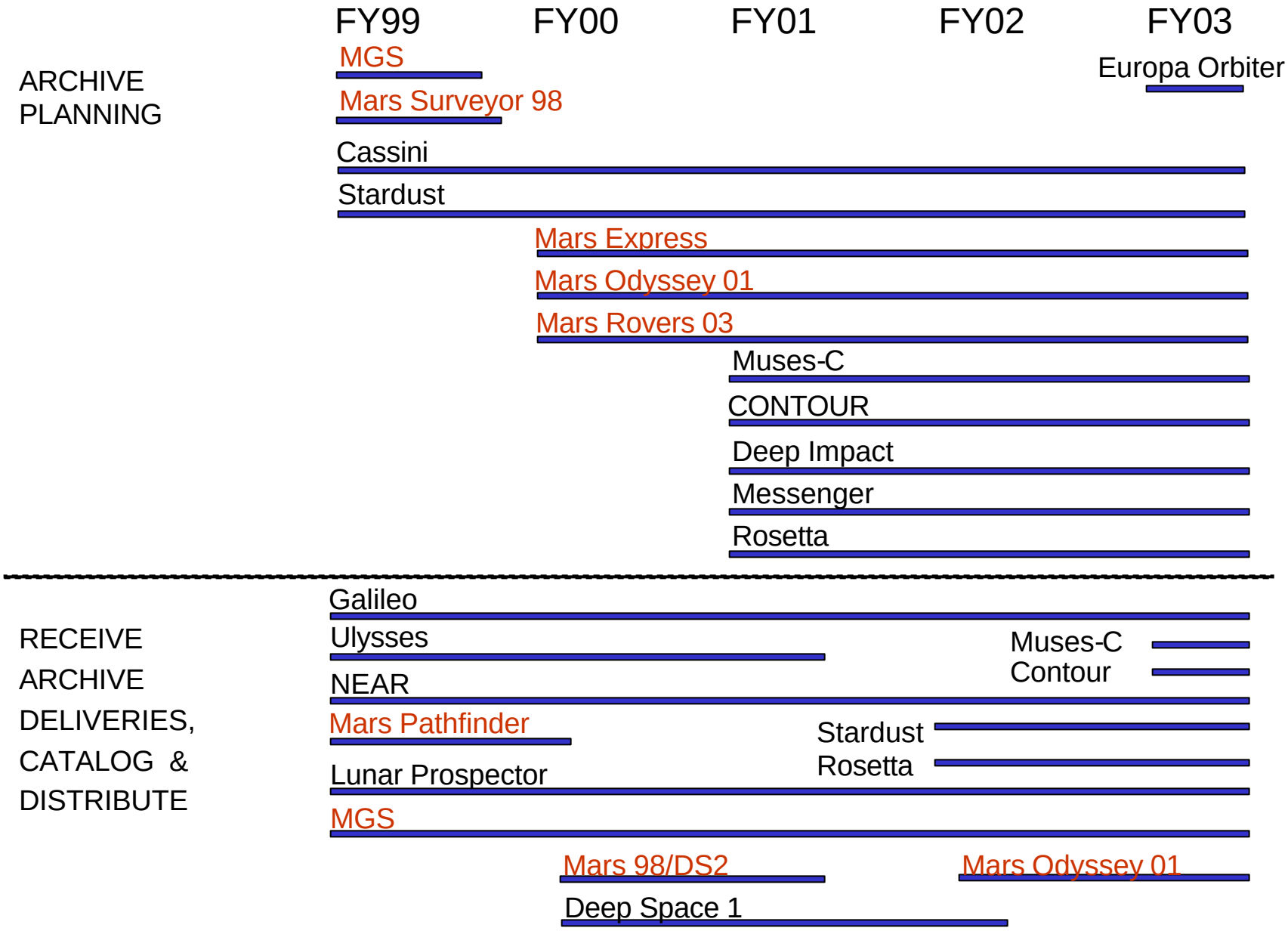
- **Centralized project management and system engineering**
  - Provides top-level uniformity across the system
  - Provides control and communication
    - PDS Management Council makes all major decisions
    - Composed of system engineer, node managers, project manager (chair)

First *federated* NASA data system

Key PDS Design Features - 2

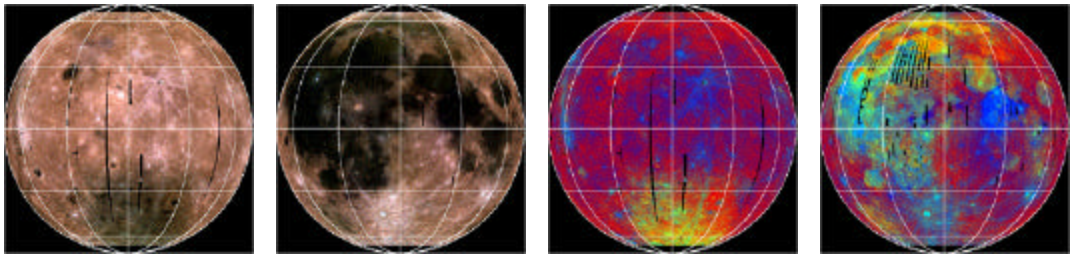
- **Standardized nomenclature and data formats for data archiving**
  - Common data dictionary for all planetary disciplines (inter-disciplinary)
  - System-wide standards for all data (multi-mission)
  - Foundation for growth and evolution
- **Peer review of all archived data**
  - Assures conformance to standards
  - Assures scientific usability and usefulness
- **Use of CD-ROMs for data archive and distribution**
  - PDS pioneered this technology for NASA
  - Now need to migrate to DVD and on-line distribution

Current Missions Supported by PDS



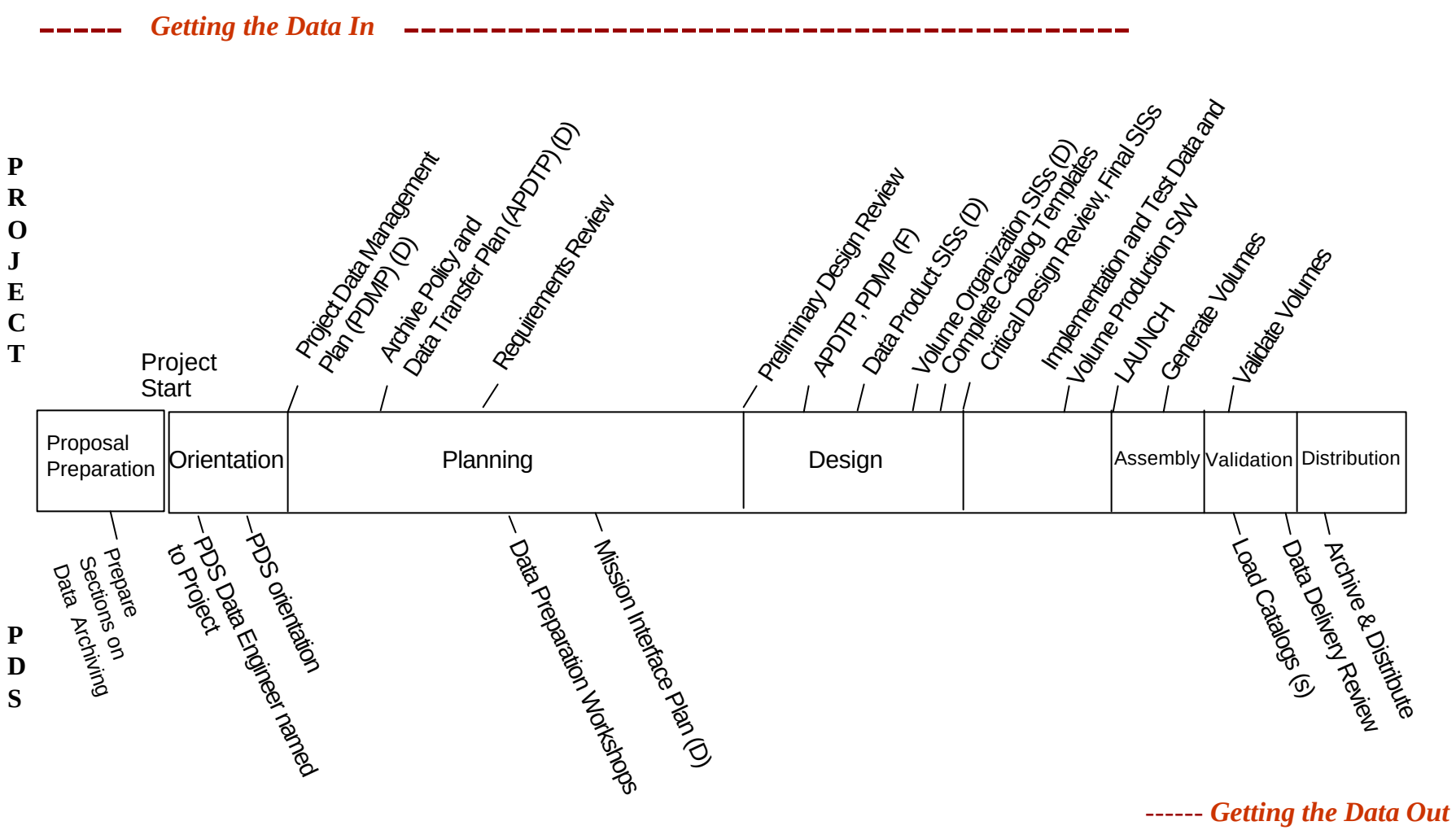
PDS Archiving Tasks

- **The main functions of the PDS are concerned with *getting data in* to the system and *getting data out* to the community**
  - ***Getting data in*** **involves assistance to flight project in the planning, design, creation and validation of the archival data products in order to ensure a high-quality, usable archive. It also involves developing and maintaining a consistent set of data product standards to ensure interoperability across the collection of data from all missions**
  - ***Getting data out*** **involves assembling and publishing the data products (physical and electronic), distributing them to the science community, and providing expertise in their use, both during the mission and especially after the end of mission**



The Clementine Ultraviolet/Visible (UVVIS) Mosaic of Earth's Moon is a Digital Image Model (DIM) compiled using more than 400,000 images from multiple spectral observations of the UVVIS camera. The mosaic is mapped in the Sinusoidal Equal-Area Projection at a resolution of 100 meters per pixel.

The PDS Archiving Process



PDS Needs

- **Automated, integrated process for data production, validation, and ingest**
  - Creation of PI-lead “data nodes” for production and distribution (e.g. THEMIS and GRS)
- **Integrated, on-line access to all data**
  - Flexible subsetting; CD or DVD “on demand”
- **Distributed data management and access**
  - Integrated spatial/temporal access to data distributed at geographically dispersed sites
- **Transformation of PDS data into standard data analysis formats**
  - PDS needs a product server to access and transform data for users’ (and program) requests

PDS Goals

- **Continue to ensure the quality and longevity of all planetary data**
- **Continue data distribution to the science community**
- **Provide fast, flexible,electronic access to *over 30 years* of accumulated planetary science data**
- **Provide a *usable knowledge base* from which to plan and do future science exploration**